Department of Environmental Conservation

Division of Environmental Remediation

Environmental Restoration
Record of Decision
TRACT II Site
Niagara Falls (C), Niagara County
Site Number B-0022-9

March 2003

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* **Erin M. Crotty, *Commissioner***

DECLARATION STATEMENT
ENVIRONMENTAL RESTORATION RECORD OF DECISION

Tract II Environmental Restoration Site
City of Niagara Falls, Niagara County, New York
Site No. B-00022-9

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Tract II environmental restoration site which was chosen in accordance with the New York State Environmental Conservation Law.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Tract II environmental restoration site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous substances from this site, if not addressed by implementing the remedy selected in this ROD, presents a current or potential threat to public health and the environment.

Description of Selected Remedy

Based on the results of the Site Investigation/Remedial Alternatives Report (SI/RAR) for the Tract II site and the criteria identified for evaluation of alternatives, the NYSDEC has selected the remedy which will allow for commercial/industrial reuse of the site. The components of the remedy are as follows:

- excavation and offsite disposal of contaminated soils from the eastern portion of the site and from the isolated hot spots of the western portion: with imposition of a deed restriction and soils management plan if warranted by residual contamination remaining after completion of remedial actions,

- removal and offsite disposal of contaminated sediments and water from the sump/drain of the underground parking garage,

- removal and offsite disposal of wastes, refuse and debris dumped about the site,
- removal and offsite disposal of asbestos containing materials (ACM) from the parking garage and dilapidated building,
- demolition or reuse of the underground parking garage and demolition of the dilapidated building, recycle and reuse of demolition debris where feasible, and offsite disposal where recycle and reuse is not feasible.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective.

MAR 12 2003

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

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RECORD OF DECISION

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SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health has selected this remedy to address the threat to human health and/or the environment created by the presence of hazardous substances at the Tract II Site.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfield. Under the Environmental Restoration (Brownfield) Program, the State may provide a grants to the City of Niagara Falls to reimburse up to 75 percent of the eligible costs for site remediation activities. Once remediated the property can then be reused.

Located in the City of Niagara Falls, the 18 acre site includes an abandoned underground parking garage, a dilapidated building and flat land with overgrown shrubs and various plants. Dumping/disposal of various wastes, refuse and demolition debris is present throughout the site. As more fully described in Sections 3 and 4 of this document, past industrial activities including battery manufacturing have resulted in the disposal of a number of hazardous substances including lead, mercury, polycyclic aromatic hydrocarbons(PAHs) and polychlorinated biphnyls(PCBs) at the site.

These disposal activities have resulted in the following threats to the public health and/or the environment.*:*

- a potential threat to human health associated with direct contact with contaminated soils, waste materials, refuse and demolition debris,
- a potential threat to human health associated with ingestion or inhalation of contaminated soils, refuse and waste materials.

In order to eliminate or mitigate the threats to the public health and/or the environment that the hazardous substances disposed at the Tract II brownfield site have caused, the following remedy was selected to allow for commercial/industrial reuse of the site:

- excavation and offsite disposal of contaminated soils from the eastern portion of the site and from the isolated hot spots of the western portions,

- removal and offsite disposal of contaminated sediments and water from the sump/drain of the underground parking garage,

- removal and off site disposal of wastes, refuse and debris dumped around the site,

- removal and offsite disposal of asbestos containing materials(ACM) from the parking garage and dilapidated building,

- demolition or reuse of the underground parking garage and demolition of the dilapidated building, recycle and reuse of demolition debris where feasible, and offsite disposal where recycle and reuse is not feasible.

The selected remedy, discussed in detail in Section 8 of this document, is intended to attain the remediation goals selected for this site in Section 6 of this Record of Decision (ROD) in conformity with applicable standards, criteria, and guidance (SCGs).

SECTION 2: SITE LOCATION AND DESCRIPTION

The Tract II site is located in the City of Niagara Falls, Niagara County. The 18 acre site is located immediately east of Highland Avenue and immediately north of Beach Avenue. It is designated under the NYSDEC Brownfield Program as Site No. B - 00022 - 9. The property is located in a mixed residential, commercial and industrial area of the city. To the north of the site lies the Tulip Corporation, an active manufacturing facility, and the Power City Warehouse Building, an abandoned factory directly adjacent to the Tract II site. Under a separate application to the State Brownfield Program, the City of Niagara Falls is pursuing investigation of the Power City site. The Tract II site and industrial areas to the north are part of the Highland Avenue Redevelopment Area and a State designated Economic Development Zone. Residential neighborhoods, mixed with small commercial areas, are generally located south, east and west of the site. Figure 1 shows the site location and Figure 2 provides a map of the Tract II site.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The following history of the industrial activities at the site is indicative of the waste disposal and contaminants found there:

1903-1970:

The Carter Crume Co., Ltd., and subsequently the American Sales Book Co., Ltd. and Moore Business Forms, Inc., produced business forms at the site in one of the largest manufacturing operations of its kind in the world. At its peak the facility, known as the Highland Ave. Plant, employed approximately 1200 workers. The plant closed in 1971, remained idle thereafter, and eventually deteriorated from abandonment and fires. Ultimately, the plant was demolished. The underground parking garage and various building foundations are all that remain at the site.

1950 - 1970:

The northeastern portion of the site including the dilapidated building was part of a manufacturing facility located adjacent to Moore Business Forms. This was part of an industrial battery manufacturing plant located adjacent to and north of the Tract II site, of which Power City was a part.

3.2 Environmental Restoration History

No site investigations, other than that conducted as part of the State Brownfield Program, have been undertaken. The City's application to participate in the State Brownfield Program was approved in August 1998 and the State Assistance Contract for the project was signed in February 1999.

SECTION 4: SITE CONTAMINATION

To determine the nature and extent of any contamination by hazardous substances of this environmental restoration site, the City of Niagara Falls completed a Site Investigation/Remedial Alternatives Report (SI/RAR).

4.1: Summary of the Site Investigation

The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site. The SI was conducted during the period of December 1998 to August 2000. A report entitled "Site Investigation and Remedial Alternatives Report, Tract II Site, Niagara Falls, New York, August 2000" has been prepared which describes the field activities and findings of the SI in detail. Sampling locations are also depicted in Figures 3 and 4.

The SI included the following activities:

- collection and chemical analysis of 15 surface (0 to 6 inch depths) soil/fill composite samples at depths,
- excavation of 12 test pits each approximately 10 feet long and 8 feet deep for collection and chemical analysis of shallow (six inches to 2 feet depths) and deep subsurface (2 feet to 8 feet depths) soil/fill samples,
- installation of 4 monitoring wells for collection and chemical analysis of groundwater samples and for the evaluation of subsurface geologic conditions,
- collection and chemical analysis of sediment and water samples from the underground parking garage sump, and
- sampling and analysis of samples from the underground parking garage and the dilapidated building to determine the presence of asbestos containing materials (ACM).

To determine which media (soil, groundwater, etc.) are contaminated at levels of concern, the SI analytical data was compared to environmental standards, criteria, and guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the Tract II site, are based on

NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of New York State Sanitary Code. For soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 provides soil cleanup guidelines based on the protection of groundwater, background conditions and health-based exposure scenarios. In addition, for soils, background concentration levels can be considered for certain categories of contaminants.

Based on the Site Investigation results in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. These are summarized below. More complete information can be found in the SI Report.

Chemical concentrations are reported in parts per million (ppm) for soil and waste samples, and in parts per billion (ppb) for groundwater samples. For comparison purposes, where applicable, SCGs are provided for each medium.

4.2: Site Geology and Hydrogeology

Commencing at the ground surface and proceeding downward, the geological strata of the site consists of the following:

- from 0 to 2 feet - a layer of silt, sand and clay mixed with industrial waste fill and refuse including cinders, slag and ash,
- from 2 to 8 feet - a layer of medium to dark brown silty clay mixed with demolition debris including bricks, wood and concrete,
- from 8 to 18 feet - a layer of red clay with very little silt,
- from 18 to 20 feet - red clay mixed with gravel and sand, some moisture, and
- below 20 feet - dolomite bedrock

The investigation determined that there is no significant groundwater aquifer in the overburden soils and fill above the dolomite bedrock. Groundwater is found at the top of the bedrock. This bedrock aquifer flows across the site generally from northeast to southwest.

4.3: Nature of Contamination

As described in the SI report, soil, sediment and groundwater samples were collected at the site to characterize the nature and extent of contamination. In addition, building material samples were collected to determine the presence of ACM. In these media, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), PCBs and/or metals were found at various levels. VOCs typically include solvents which are used for a wide variety of purposes such as metals degreasing and printing. SVOCs at the site consist primarily of PAHs. PAHs are common in coal, ash, ash residues, as well as asphalt, tar and petroleum products. PCBs were utilized in dielectric fluids. Prior to regulation, PCBs were commonly found in electrical transformers and similar equipment.

Heptachlor-epoxide, found in site soils, is an oxidized form of heptachlor; an insecticide utilized up to the 1970s for termite and other insect control.

Four metals (lead, mercury, arsenic and chromium) were found at the site. Some, if not all, are likely resultant of past manufacturing operations at or near the site.

In the past, asbestos was commonly used in building construction material and as piping insulation. ACMs were found in both the parking garage and dilapidated building.

4.4: Extent of Contamination

Table 1 summarizes the extent of contamination for the contaminants of concern in the soil, sediment and groundwater and compares the data with the SCGs for the site. Table 2 compares the soil contamination of the western and eastern portions of the site. Figure 5 depicts existing site contamination. The following sections discuss the media which were investigated and present a summary of the findings of the investigation.

Soil

The primary groups of contaminants found in site soils include several SVOCs, metals, and, to a lesser extent, pesticides. While these contaminants were found throughout the site, their concentrations, particularly for metals, are generally much greater in the eastern portion of the site than in the western portion. This distinction is presented in Figure 5 wherein the site is divided into the West Area and the East Area, and in Table 2 wherein soil contaminant levels of these areas are compared. Most soil contaminants are found in surface soils (0 - ½ feet depth) and shallow subsurface soils (½ - 2 feet depth).

SVOC contamination found in surface soils (0 - ½ feet depth) and shallow subsurface soils (½ - 2 feet depth) consists mainly of seven PAHs found at levels above the SCGs cited in Section 4.1 above. For example, chrysene was detected in 11 of 12 surface soil samples collected at the site, with a maximum concentration of 29 ppm; and in 8 of 11 shallow subsurface soils, with a maximum concentration of 60 ppm. The soil cleanup guidance value for this compound is 0.4 ppm. Other PAHs found above SCGs are similar in both frequency of exceedances and maximum concentrations. While PAHs were detected throughout the site, the East Area and a small localized area (hot spot) in the West Area contain the highest levels of PAHs in surface and shallow subsurface soils. Below depths of two feet, subsurface soils (2 to 8 feet depths) demonstrate much less PAH contamination; with a significant portion of samples revealing PAH concentrations generally below SCGs. For example, while chrysene was detected in deep subsurface soils, concentrations of this compound did not exceed SCGs. Where detected, PAH contamination appears to be associated with debris and refuse fill which is intermixed with site subsoils in some areas.

Four metals, (lead, mercury, chromium and arsenic) are prominent in both surface and shallow subsurface soils at the site. For example, site-wide lead concentrations exceeded SCGs in 8 of 15 surface soil samples and 6 of 11 shallow subsurface soil samples. The maximum concentration of lead detected in these soils was 32,500 ppm, compared to a TAGM cleanup goal of 500 ppm. Metals above SCGs appear primarily in the East Area and the West Area hot spot noted earlier. In

Table 2, for example, the combined range of concentrations of lead in surface and shallow subsurface soils (0 - 2 feet depth) in the West Area was 19.5 ppm to 972 ppm, while the range in the East Area was 127 to 32,500 ppm. For the combined surface and shallow subsurface soils, the lead cleanup goal was exceeded in only 1 of 6 samples in the West Area, but in 14 of 20 samples in the East Area. Significantly elevated lead levels suggest that a portion of the surface and shallow subsurface soils in the East Area are characteristic hazardous waste as defined by regulation, based on leaching potential. Further sampling and analysis during the remedial design phase will be necessary to determine the quantities of soil that are hazardous waste. Similar to the PAHs discussed above, metal concentrations in the deep subsurface soils do not exceed SCGs.

In the site soil samples, several pesticides were detected at concentrations generally below applicable SCGs. The most prevalent pesticide detected was heptachlor-epoxide, found in both surface soils and shallow subsurface soils. Of the surface and shallow subsurface soil samples collected, heptachlor-epoxide exceeded SCGs in 12 of 23 samples. The maximum concentration detected was 1.7 ppm, compared to the cleanup guidance value of 0.02 ppm.

Sediments

A small concrete sump (approximate capacity of 100 gallons) is located in the former mechanical room of the underground parking garage. The room may have been used to house electrical transformers, switch gear and other utilities supporting the facility. Approximately five cubic feet of sediment was found in the sump. Sampling and analysis of water and sediments found in the sump revealed the presence of Aroclor-1260, a PCB. Several SVOCs and metals were also detected, but are much less significant than Aroclor-1260. The concentration of this PCB in sediment was 31,000 ppm, and that of the sump water was 30 ppb. Materials containing PCBs at concentrations above 50 ppm are defined by statute as hazardous wastes and must be disposed accordingly.

Groundwater

Groundwater samples from the four site monitoring wells were analyzed for VOCs, SVOCs, PCBs/Pesticides and metals. No significant contamination was detected in any of the samples except an elevated level of methylene chloride (28.5 ppb) found in well MW-4, located in the southeast corner of the site. The groundwater standard for this VOC is 5 ppb. While methylene chloride is a common laboratory contaminant, its limited presence in site groundwater may also be the result of past site activities. Iron, manganese, magnesium and sodium were found at levels exceeding SCGs. These metals are naturally occurring and may not be attributable to past site operations. Typically, iron, magnesium and manganese are of aesthetic concern when an aquifer is used for water supply purposes. The City of Niagara Falls, including the Tract II area, is served by a municipal water supply system. Site groundwater is currently not a source of potable water, nor is such a use anticipated.

Surface Water

Surface water was not encountered during the SI. Therefore no surface water samples were collected for chemical analysis.

Waste Materials

Samples to identify ACM were collected from both the underground parking garage and the dilapidated building. The samples, collected mainly from the pipes, doors, walls and panel insulation, indicate that ACM is present in both structures.

A large amount of refuse and debris is found in the dilapidated building and throughout the site. Several five-gallon pails of unknown materials are included in the refuse contained in the dilapidated building.

4.5: Summary of Human Exposure Pathways

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in Section 5 of the SI report.

An exposure pathway is the manner by which an individual may come in contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Pathways which are known to or may exist at the site include:

- Direct contact with contaminated soils, sump sediments/water and refuse,
- Ingestion of contaminated soils, sump sediments/water and refuse, and
- Inhalation of dusts from contaminated soils.

Exposure to contaminated soils, sediments/water or refuse would require persons entering the site, then contacting, ingesting and/or inhaling these materials. Those most likely exposed would include site trespassers and future workers at the site during redevelopment. Currently access to the site is open and uncontrolled. Persons who may enter the site are potentially exposed to site contaminants. Potential future exposures to site workers can be addressed through proper use of health and safety procedures.

4.6: Summary of Environmental Exposure Pathways

Given the highly urbanized area about the Tract II site, fishery resources do not exist and wildlife resources are very limited. Exposure of wildlife frequenting the Tract II site is likely not significant. The most notable ecological resource in the general vicinity is the Niagara River, located approximately one mile from the site. While there is some possibility for the offsite transport of site contaminants via storm water runoff to the Niagara River or its tributaries, the potential for exposure and impact is minimal. Site contaminants do not pose a significant threat to environmental resources.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past owners and operators, waste generators, and haulers.

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the State to recover State response costs should PRPs be identified. The City of Niagara Falls will assist the State in its efforts by providing all information to the State which identifies PRPs. The City of Niagara Falls will also not enter into any agreement regarding response costs without the approval of the NYSDEC.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS AND THE FUTURE USE OF THE SITE

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to meet all SCGs and be protective of human health and the environment. At a minimum, the remedy selected must eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous substance and hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The proposed future use of the Tract II site is industrial or commercial development. The goals selected for this site are:

- Reduce, control, or eliminate to the extent practicable the contamination present within the soils, wastes and refuse on the site.
- Provide for attainment of SCGs for soil, to the extent practicable.
- Eliminate the potential for direct human contact with, and ingestion or inhalation of, the contaminated soils, wastes and refuse on the site.
- Eliminate the physical hazards posed by the site building and garage.
- Facilitate site redevelopment.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost effective and comply with other statutory requirements. Potential remedial alternatives for the Tract II site were identified, screened and evaluated, and are presented in the August 2000 Site Investigation and Remedial Alternatives Report.

The SI/RAR report presented and evaluated four remedial alternatives including site covering; contaminated soil excavation with off-site disposal; institutional controls; and no action. Within the covering and soil excavation alternatives, options regarding the amount of the site that would be

covered or excavated were included. For the covering alternatives, the NYSDEC evaluated the proposed remedies utilizing a one foot thick soil cover as this is a common cover thickness for sites to be utilized for industrial/commercial purposes. Based on the findings of the SI and evaluations in the RAR, the NYSDEC has included an additional alternative, reflecting a combination of remedial actions addressed in the RAR. With these modifications to the RAR alternatives, a total of six remedial alternatives were evaluated.

Given the predominance of lead contamination found in soils, alternatives for the East Area were developed to address this contaminant. It is expected that effective remediation of lead contaminated soils in the East Area will effectively address the other contaminants found there as well.

Long-term operation and maintenance (O&M) to insure remedy effectiveness would be required with any alternative wherein a soil cover was utilized to prevent release of or contact with contaminants below. Typically, O&M activities would include periodic inspection of the cover, periodic mowing and reseeding (if necessary) to maintain a suitable vegetative cover and repairs of damage to the cover through such occurrences as erosion or rutting.

A summary of the detailed analysis follows. As presented below, the time to implement reflects only the time required to implement the remedy, and does not include the time required to design the remedy or procure contracts for design and construction.

7.1: Description of Remedial Alternatives

The potential remedies are intended to address the contaminated soil, sump water, sump sediments, waste materials and buildings/structures at the site. The cost components consist of the initial capital, annual O&M, and total present worth costs. Total present worth is the capital cost added to the total future O&M costs, modified to reflect their present value.

With exception of the No Action alternative, demolition of the dilapidated building and parking garage (site structures) is included in each remedial alternative. Demolition activities would consist of removal/disposal of site refuse, removal/disposal of ACM, removal/disposal of PCB contaminated water and sediment from the garage sump, razing of the structures and disposal of demolition debris. Disposal of demolition debris from the dilapidated building would be off-site at an approved facility. If uncontaminated, the underground parking garage would be demolished into itself, with clean earth fill placed over the demolished structure. The estimated total cost of demolition is $ 625,400 and is included in the costs shown for each alternative except No Action. The physical condition of the underground parking garage may allow for rehabilitation and reuse as part of site redevelopment. If reuse of the garage is desired, a structural investigation will be conducted as part of the remedial design phase of the project to determine the condition of the underground parking garage. If the garage is structurally sound and it's use a desired part of future redevelopment, it will be left undemolished; thus reducing demolition costs by approximately $400,000. For comparative purposes, the remedial alternatives evaluated (except for the No Action alternative) assume demolition of the parking garage.

No Action

The No Action alternative is typically evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Alternative 1A - Full Site Soil Cover & Demolition

Present Worth:	*$ 1,408,800*
Capital Cost:	*$ 1,101,400*
Annual O&M:	*$ 20,000*
Time to Implement:	6 to 8 months

This alternative would consist of installation of a one foot thick soil cover over the entire site (24,700 cubic yards), imposition of a deed restriction to control future development activities, long term monitoring of the cover and demolition of site structures.

Alternative 1B - East Area Soil Cover, Hot Spot Removal & Demolition

Present Worth:	*$ 1,212,900*
Capital Cost:	*$ 982,400*
Annual O&M:	*$ 15,000*
Time to implement:	6 - 8 months

This alternative would provide for installation of a one foot thick soil cover over the East Area (12,000 cubic yards), imposition of a deed restriction to control future development activities, long term monitoring of the cover and demolition of site structures. One small area (hot spot) of PAH contaminated soil in the West Area would also be excavated (7.5 cubic yards) and disposed off-site.

Alternative 2A - Full Site Excavation & Demolition

Present Worth:	*$ 9,566,300*
Capital Cost:	*$ 9,566,300*
Annual O&M:	*None*
Time to implement:	6 to 8 months

This alternative calls for excavation and off-site disposal of the upper two feet of soil throughout the entire site (49,400 cubic yards), replacement of excavated areas with clean soil fill to original grade and demolition of site structures.

Alternative 2B - East Area Excavation / Two Feet Maximum Depth, Hot Spot Removal & Demolition

Present Worth:	*$ 3,042,000*
Capital Cost:	*$ 3,042,000*

Annual O&M: *None*
Time to implement: 6 to 8 months

This alternative would include excavation and off-site disposal of East Area contaminated soils including the six-inch deep surface soils (5,250 cubic yards) and the shallow subsurface soils (7,875 cubic yards) up to a maximum of two feet depth, from ground surface. Also included would be excavation of the hot spot in the West Area, replacement of excavated areas with clean soil fill to original grade, imposition of a deed restriction to control future development activities, implementation of a soils management plan for residual contaminated soil and demolition of site structures.

Alternative 2C - East Area Excavation / Six Inch Depth, Hot Spot Removal & Demolition

Present Worth: *$ 2,100,000*
Capital Cost: *$ 1,869,500*
Annual O&M: *$ 15,000*
Time to implement: 6 - 8 months

This alternative would provide for excavation and off-site disposal of the upper six inches of soil from the East Area (5,250 cubic yards), excavation of the hot spot in the West Area, replacement of excavated areas with clean soil fill to original grade, imposition of a deed restriction to control future development activities, implementation of a soils management plan for residual contaminated soil and demolition of site structures.

7.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of environmental restoration project sites in New York State (6 NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is included in the Remedial Alternatives Report.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance. Given the nature and extent of contamination found at the site, the most significant SCG applicable to the Tract II site is NYSDEC TAGM 4046 Soil Cleanup Guidance; utilized to evaluate contaminated soil remediation alternatives.

The No Action Alternative would not meet SCGs as contaminated soils exceeding cleanup guidance criteria would remain on site, uncontained and uncontrolled. Alternatives 1A and 1B include total or partial site covering as part of the remedial action considered. While these alternatives would generally meet applicable SCGs, all or nearly all contaminated soils exceeding guidance criteria would remain on site. Alternatives 2A, 2B and 2C provide for

excavation and off-site disposal of contaminated soils. The depth of excavation (6 inches) provided for in Alternative 2C would leave the contaminated shallow subsurface soils on site. The two feet maximum excavation depths of both Alternatives 2A and 2B would at a minimum remove all of the highly contaminated soils identified at the site. As Alternative 2A provides for excavation of the entire site, it would remove all contaminated site soils that exceed cleanup criteria. Alternative 2B would require excavation of only the East Area and hot spot removal in the West Area. Under this alternative, some residual soils above cleanup guidance would remain in the West Area. Given the distribution of soil contaminants about the Tract II site, the difference in SCG compliance for Alternatives 2A and 2B is not significant; and both would generally comply with soil cleanup guidance criteria.

SCGs associated with the demolition of the site structures are typically established and administered at the local municipal level. State SCGs applicable to the demolition of site structures would apply to removal and disposal of ACM and PCB contaminated sediments and water in the garage sump. In this regard, all alternatives except No Action would meet applicable SCGs in that ACM and PCBs would be removed and properly disposed.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The No Action Alternative would not be protective of human health nor the environment. Pathways for direct human exposure would continue to exist, and no containment nor control of contaminated soils, ACM, PCBs and other site wastes and refuse would be provided. All other alternatives evaluated would overall be protective of human health and the environment. Through site covering and/or excavation, contaminated soils would no longer remain in an uncontrolled or uncontained condition. Given the distribution of contaminated site soils, site-wide covering Alternative 1A and site-wide excavation Alternative 2A are most protective, provided that the integrity of any site cover is not compromised. Partial covering Alternative 1B and partial excavation Alternative 2B are slightly less protective than the site-wide alternatives in that residual soil contamination will remain in the western portion of the site. Alternative 2C, which would leave contaminated shallow subsurface soils under a six-inch clean soil cover, is less protective than the other covering and excavation alternatives. With Alternative 2C, the potential for exposure of contaminated soil through such activities as erosion or rutting is greater due to the thinner layer of protective soil cover provided. Demolition, including removal/disposal of ACM, PCBs and site refuse, would be adequately protective of human health and the environment in all but the No Action Alternative.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

The No Action Alternative would present no short-term adverse impact as no remedial actions would be undertaken and the site would remain in its current condition. The other alternatives evaluated would involve demolition and contaminant removal, disposal or containment, and require the use of heavy construction equipment. For these alternatives, construction activities would last approximately one construction season of six to eight months. Given the neighborhoods around the site, the most significant short-term impact would be the increased truck traffic and on-site heavy equipment operation needed to undertake the site remediation. Short-term impacts would generally be greatest from those actions involving excavation and transport of large volumes of soil. As such Alternatives 1A and 2A, which involve full site covering and excavation respectively, have the greatest short-term impact. Slightly less impacts would be anticipated for Alternatives 1B, 2B and 2C, wherein less soil handling is required. Short term impacts relating to the release of dust and other air pollutants could occur at the site during excavation, backfilling, covering and demolition activities. Worker health and safety plans and community air monitoring programs would be developed and implemented to insure no adverse impacts occur in this regard.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.
The No Action Alternative would not comply with this criteria. Wastes, contaminated soils and decaying site structures would remain in their current condition, providing potential exposure pathways to persons entering the site. Alternatives 1A and 1B call for covering all or part of the site. At a minimum, approximately one-half of the site would be covered under these alternatives. With proper maintenance, covering would be an effective long-term alternative to protect human health and the environment. However, future development activity would require cover redesign, modification and/or replacement to ensure long-term effectiveness and permanence. This is also true with Alternative 2C as future development that intrudes through the six-inch clean soil layer would require further remedial action to address the contaminated soils that would be encountered. Alternatives 2A and 2B include excavation and off-site disposal of contaminated site soils. They would provide maximum long-term effectiveness and permanence in that contaminated soils above SCGs would be permanently removed from the site. These soil removal alternatives, in and by themselves, would allow for future site development without the need to redesign or reconstruct a site cover. Under Alternative 2B, redevelopment activities in the West Area could require special handling of residual contaminated soils. Therefore, Alternative 2A represents the greatest level of permanence and long-term effectiveness of all the alternatives considered. With exception of the No Action Alternative, demolition, including removal/disposal of ACM, PCBs and site refuse, as included in all other alternatives, would provide maximum long-term effectiveness and permanence.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the substances at the site.

The No Action Alternative would not comply with this criteria. Under this alternative, all wastes and contaminated soils would remain at the site, uncontained and uncontrolled. Alternatives 1A and 1B, providing for contaminated soil covering would not totally comply with this criteria. Although the mobility of contaminated soils (wind blown dust, for example) would be reduced by covering, there would be no change in the current toxicity or volume of these soils as they would remain at the site in their present location. Alternatives 1B, 2B and 2C provide for partial excavation of the contaminated soils at the site. Under these alternatives, the volume of contaminated soils would be reduced through excavation and off-site disposal; but would not be eliminated as contaminated soils would remain at the site. Alternative 2A would comply with this criteria as contaminated soil would be permanently removed from the site.

At the Tract II site, demolition, including removal/disposal of ACM, PCB and site refuse, as included in all but the No Action Alternative would significantly reduce mobility and volume of these wastes.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc..

The No Action Alternative would be the easiest to implement, but would not allow for future site development. All of the remaining alternatives would require design and construction technologies common to the industry. Contractors experienced in execution of environmental projects are available. Disposal facilities and construction materials (primarily soil fill) are locally available. As the City of Niagara Falls is the owner of this site, property acquisition is not at issue and long term access would not pose any significant problem. The site and the surrounding area is open and readily accessible. Therefore all alternatives could be implemented effectively.

7. Cost: Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table 3. There are no costs associated with the No Action Alternative. For the other five alternatives evaluated, total present worth costs range from approximately $ 1.2 million to $ 9.6 million. The differences in project costs generally reflect the extent of site covering or contaminated soil removal and replacement. As noted earlier, demolition costs, including ACM, PCB and waste material removal/disposal, is common for each of these alternatives and is estimated to be $ 625,400.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the SI/RAR reports and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary" included as Appendix A presents the public comments received and the Department's response to the concerns raised. Several comments were received. In general the public comments received were supportive of the selected remedy. The City of Niagara Falls in its comments on the alternative 2B(the selected remedy), requested that an option be included not to demolish the underground parking garage but retain it for future use. Under this option, the garage if structurally sound, will remain for reuse in future redevelopment of the site. If reuse of the garage is desired, a structural investigation will be conducted as part of the remedial design phase of the project to determine the condition of the underground parking garage. If found structurally sound, it will not be demolished. All other remedial actions relating to the garage including removal of asbestos, PCBs and other wastes will be implemented irrespective of the ultimate fate of the structure.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the results of the SI/RAR, and the evaluation presented in Section 7, the NYSDEC is selecting Alternative 2B as the remedy of the site. This selection is based upon evaluation of the six alternatives developed for the site.

The No Action Alternative will not comply with the threshold criteria nor a number of the balancing criteria as no remedial action, although necessary at the Tract II site, will be undertaken. As such, this alternative was not considered further. The five remaining alternatives include remedial actions to address site cleanup and are discussed below.

The covering options, Alternatives 1A and1B and limited excavation Alternative 2C generally meet threshold criteria. These alternatives will be adequately protective of human health and the environment, although significant quantities of soils with contaminants exceeding cleanup guidance will remain at the site. Both Alternatives 2A and 2B, the soil excavation and off-site disposal options, will generally comply with all threshold criteria and will remove all or most of the soils exceeding cleanup guidance from the site.

With respect to the balancing criteria, the short-term effectiveness and Implementability of all remedial action alternatives are similar and all meet these criteria. Similarly, all alternatives will provide satisfactory long-term effectiveness and permanence. However, the covering options, Alternatives 1A and 1B, will require that future development either avoid covered areas of the site or accommodate cover redesign and restructuring to insure cover integrity. Long-term maintenance of the cover will be necessary. This is also true with Alternative 2C wherein only the upper six inches of contaminated soils will be removed from the East Area. Future development in this instance will have to avoid most of the East Area, be limited to surface development or accommodate further treatment/disposal of contaminated soils encountered there. Alternative 2A would eliminate these types of limitations as contaminated soils will be permanently removed from the site. This is nearly the same for Alternative 2B. While some additional work could be needed to address residual soil contamination in the West Area, development will not be significantly hindered nor impacted. The covering alternatives will reduce only contaminant mobility; whereas the removal alternatives will permanently eliminate these materials from the site. Given these considerations, covering alternatives overall will be less effective in meeting the general brownfield

objectives (site remediation and site development/use) than the removal alternatives. Alternatives 1A and 1B are therefore rejected. Similarly, Alternative 2C is rejected as substantial amounts of contaminated soil will remain on the site under a relatively thin layer of soil cover.

With exception of project costs, Alternatives 2A and 2B will provide adequate and similar compliance with threshold and balancing criteria. Therefore, cost is considered in the evaluation process. The substantially higher cost of Alternative 2A over Alternative 2B will not result in significantly higher levels of protection nor substantially improved development opportunities. Alternative 2B will be most cost effective and is therefore selected for implementation.

The estimated present worth cost to implement the remedy is $ 3.04 million. No O&M costs are associated with this alternative.

The selected remedy Alternative 2B is presented in Figure 6.

The elements of the selected remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and/or monitoring of the remedial program. Any uncertainties identified during the SI/RAR will be resolved during the design process. As part of this design program, a detailed soil sampling program will be conducted to clearly identify the limits of excavations and the underground parking garage will be evaluated to determine whether it is structurally sound.

2. Implementation of the following remediation measures (estimated quantities are provided in parentheses):

   - Excavation and off-site disposal of contaminated soils from the East Area including the six-inch deep surface soils (5,250 cubic yards) and shallow subsurface soils up to a depth of 2 feet (7,875 cubic yards), and replacement with clean soil fill (13,125 cubic yards),

   - Excavation and off-site disposal of contaminated soil from the hot spot area in the western portion of the site and replacement with clean soil fill (7.5 cubic yards),

   - Removal and off-site disposal of sediments (5 cubic feet) and water (less than 100 gallons) from the parking garage sump,

   - Removal and off-site disposal of ACM (210 tons) and other wastes from the parking garage and the dilapidated building,

   - Demolition of the parking garage and the dilapidated building; parking garage rubble, if clean, to remain as on-site fill (3,600 cubic yards), and dilapidated building rubble to be disposed off-site (2,000 cubic yards). The

parking garage will not be demolished if it is determined to be structurally sound and a desired element of site redevelopment .

C Removal and disposal of general refuse dumped about the site,

C Site restoration to include grading, topsoil placement and seeding of excavated and/or filled areas.

• Development of a soils management plan to address residual contaminated soils excavated during future redevelopment will be required if warranted by the type and concentration residuals left after completion of remedial actions. The plan will require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations, and

C Imposition of a deed restriction will be required if warranted by residual soil contamination remaining after remedial actions are completed. The deed restriction will require compliance with the approved soils management plan and annual certification to the NYSDEC, by future property owners, that the implemented remedy has been maintained in accordance with the soils management plan.

Given the size of the site, the distribution of site contaminants, the scope of the remedial project and the costs of these proposed actions, a phased remedial program incorporating the above listed remedial elements could be possible. Project phasing will be considered during the early stages of remedial design. Interim measures such as fencing or targeted soil removal may be necessary to facilitate phased remediation.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the Tract II Site environmental restoration process, a number of Citizen Participation activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

C A repository for documents pertaining to the site was established.

C A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.

C In November 1998, a Fact Sheet was sent to the mailing list introducing the site and explaining work to be done at the site.

C A Bulletin was sent to the mailing list in August 2002, presenting the Proposed Remedial Action Plan for the site and announcing a public meeting set for September 10, 2002. A public comment period was set from August 28, 2002 to October 14, 2002.

- A public meeting was held on September 10, 2002 at the Niagara Falls Earle Brydges Public Library to discuss the Proposed Remedial Action Plan of the site.

- In October 2002, a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

TABLE 1
NATURE AND EXTENT OF CONTAMINATION

Medium	Category	Contaminant of Concern	Concentration Range (ppm)	Frequency of Exceeding SCGs	SCGs (ppm)
Soil	Surface Soil (0 - ½') Semivolatile organic compounds (SVOCs)	Benzo-a-anthracene	ND to 29	11 of 12	0.224
		Chrysene	ND to 29	11 of 12	0.400
		Benzo-b-Flouranthene	ND to 20	11 of 12	1.1
		Benzo-k-Flouranthene	ND to 21	11 of 12	1.1
		Dibenzo-a-h-anthracene	ND to 9.8	11 of 12	0.014
		Benzo-a-Pyrene	ND to 25	10 of 12	0.001
		Indeno-1,2,3-cd-Pyrene	ND to 26	10 of 12	3.2
	Shallow Subsurface Soil (½' - 2') Semivolatile organic compounds (SVOCs)	Benzo-a-anthracene	0.092 to 59	10 of 11	0.224
		Chrysene	0.11 to 60	8 of 11	0.400
		Benzo-b-Flouranthene	0.078 to 46	7 of 11	1.1
		Benzo-k- Flouranthene	0.079 to 38	6 of 11	1.1
		Dibenzo-a-h-anthracene	ND to 19	10 of 11	0.014
		Benzo-a-Pyrene	0.095 to 53	11 of 11	0.061
		Indeno-1,2,3-cd Pyrene	0.075 to 48	4 of 11	3.2
	Deep Subsurface Soil (2' - 8') Semivolatile organic compounds (SVOCs)	Benzo-a-anthracene	ND to 0.27	1 of 5	0.224
		Chrysene	ND to 0.27	0 of 5	0.40
		Benzo-b-Flouranthene	ND to 0.19	0 of 5	1.10
		Benzo-k- Flouranthene	ND to 0.22	0 of 5	1.10
		Dibenzo-a-h-anthracene	ND to 0.08	2 of 5	0.014
		Benzo-a-Pyrene	ND to 0.22	2 of 5	0.061
		Indeno-1,2,3-cd Pyrene	ND to 0.20	0 of 5	3.2

TABLE 1 (contd.)
NATURE AND EXTENT OF CONTAMINATION

Medium	Category	Contaminant of Concern	Concentration Range (ppm)	Frequency of Exceeding SCGs	SCGs (ppm)
Soil	Surface Soil (0 - ½') Metals	Lead	120 to 32,500	8 of 15	500
		Mercury	ND to 100	12 of 15	0.10
		Chromium	18 to 136	3 of 15	50
		Arsenic	5.7 to 67.1	8 of 15	7.5
	Shallow Subsurface Soil (½' - 2') Metals	Lead	30 to 9950	6 of 11	500
		Mercury	ND to 7.3	9 of 11	0.10
		Chromium	5.5 to 66.7	1 of 11	50
		Arsenic	6.1 to 74.2	7 of 11	7.5
	Deep Subsurface Soil (2' - 8') Metals	Lead	7.1 to 109	0 of 5	500
		Mercury	ND	0 of 5	0.10
		Chromium	2.4 to 21.0	0 of 5	50
		Arsenic	2.6 to 7.7	1 of 5	7.5
Soil	Surface Soil (0 - ½') Pesticides	Heptachlor - Epoxide	ND to 0.19	7 of 12	0.02
	Shallow Subsurface Soil (½' - 2') Pesticides	Heptachlor - Epoxide	ND to 1.70	5 of 11	0.02
	Deep Subsurface Soil (2' - 8') Pesticides	Heptachlor - Epoxide	ND to 0.01	0 of 5	0.02

TABLE 1 (contd.)
NATURE AND EXTENT OF CONTAMINATION

Medium	Category	Contaminant of Concern	Concentration Range (ppm)	Frequency of Exceeding SCGs	SCGs (ppm)
Sump Sediments	Semivolatile organic Compounds (SVOCs)	Benzo-a-anthracene	140	1 of 1	0.4
		Benzo-b-Fluoranthene	56	1 of 1	1.1
		Benzo-k-Fluoranthene	79	1 of 1	1.1
		Benzo-a-Pyrene	73	1 of 1	0.41
		1,2,4-Trichlorobenzene	97,000	1 of 1	3.4
		Dichlorobenzene	630	1 of 1	0.18
	PCBs and Pesticides	Aroclor-1260	31,000	1 of 1	1.0
	Metals	Lead	7,600	1 of 1	128
Ground-water	Volatile organic compounds	Methylene Chloride	28.5 ppb	1 of 4	5 ppb

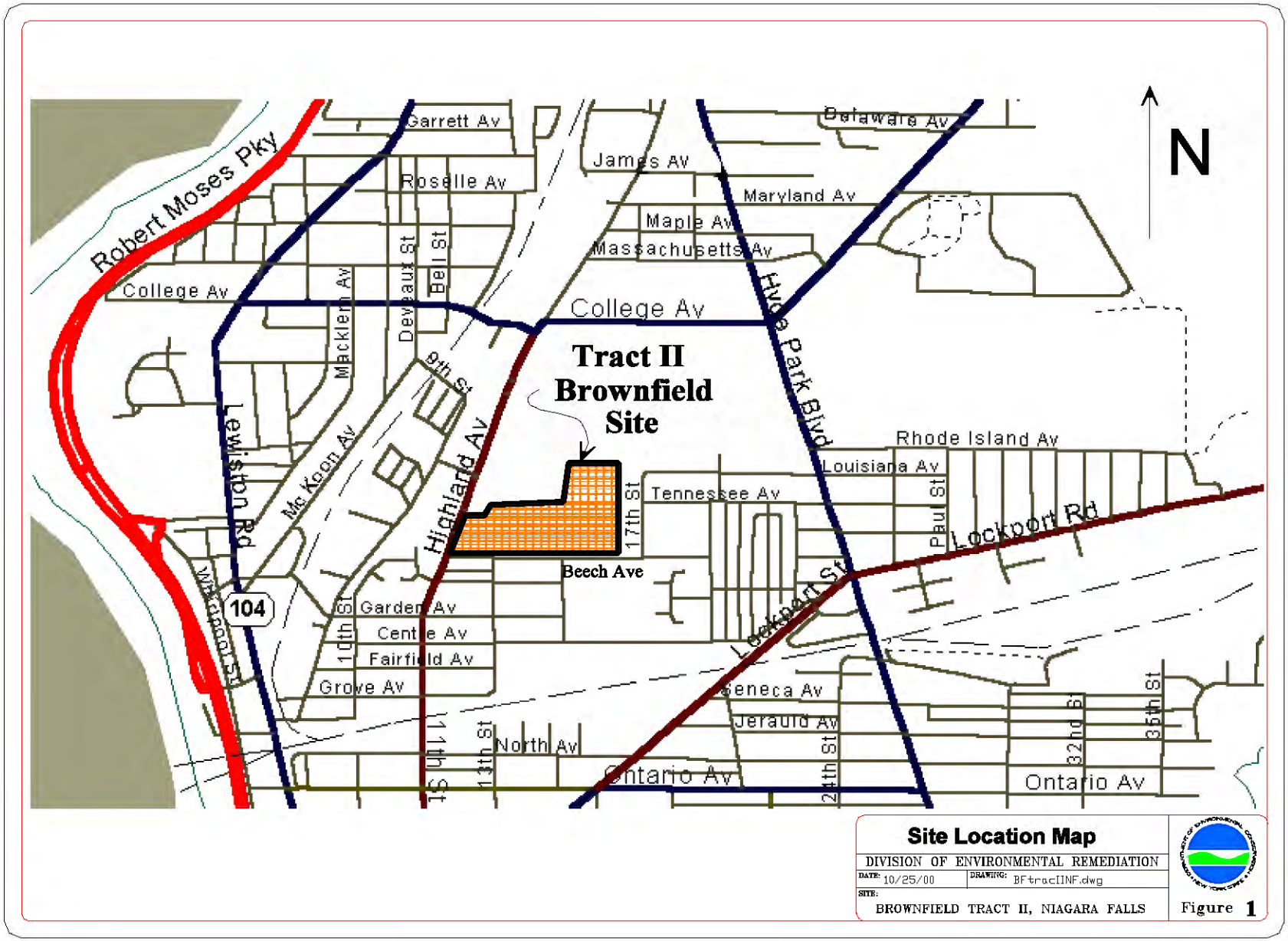
TABLE 2
Primary Contaminants in Soils
East Area and West Area

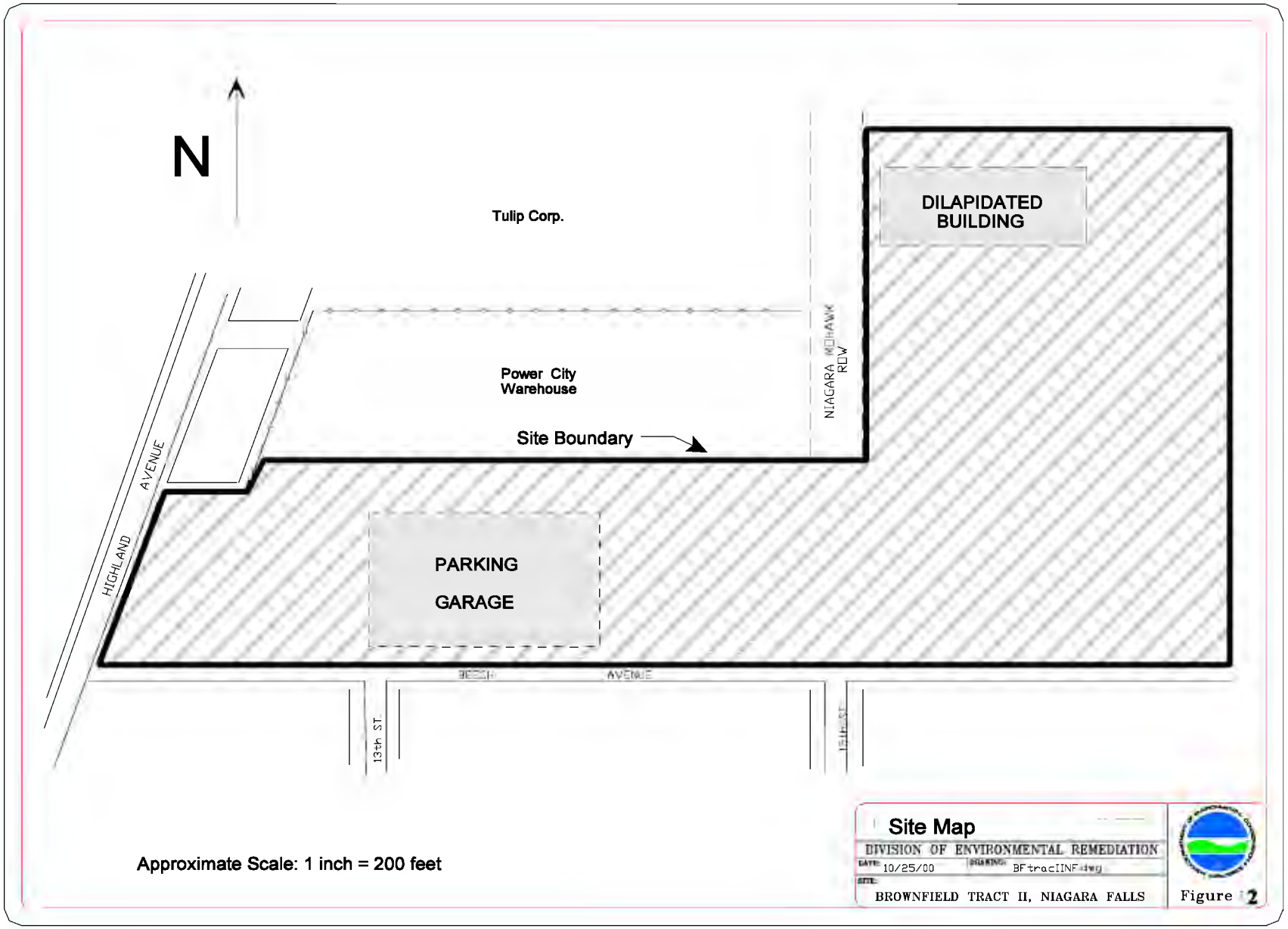
Category	Contaminant	West Area		East Area		SCGs (ppm)
		Concentration Range (ppm)	Frequency of exceeding SCGs	Concentration Range (ppm)	Frequency of exceeding SCGs	
Surface Soil (0 - ½') Metals	Lead	120 to 295	0 of 4	127 to 32,500	9 of 11	500
	Mercury	ND to 0.45	2 of 4	ND to 100	10 of 11	0.10
Shallow Subsurface Soil (½' - 2') Metals	Lead	19.5 to 972*	1of 2	105 to 9,950	5 of 9	500
	Mercury	0.18 to 0.19	2 of 2	ND to 3.4	7 of 9	0.10
Deep Subsurface Soil (2' - 8') Metals	Lead	7.1 to 19.5	0 of 2	10.2 to 109	0 of 3	500
	Mercury	ND	0 of 2	ND	0 of 3	0.10
Surface Soil (0 - ½') SVOCs	Benzo-a-pyrene	ND to 2.2	3 of 4	ND to 25	7 of 8	0.061
	Chrysene	0.92 to 2.6	4 of 4	ND to 29	7 of 8	0.40
Shallow Subsurface Soil (½' - 2') SVOCs	Benzo-a-pyrene	0.27 to53*	4 of 4	0.095 to 19	7 of 7	0.061
	Chrysene	0.39 to 60*	2 of 4	0.11 to 24	6 of 7	0.40
Deep Subsurface Soil (2' - 8') SVOCs	Benzo-a-pyrene	ND to 0.22	1 of 2	ND to 0.27	1 of 3	0.061
	Chrysene	ND to 0.27	0 of 2	ND to 0.21	0 of 3	0.40

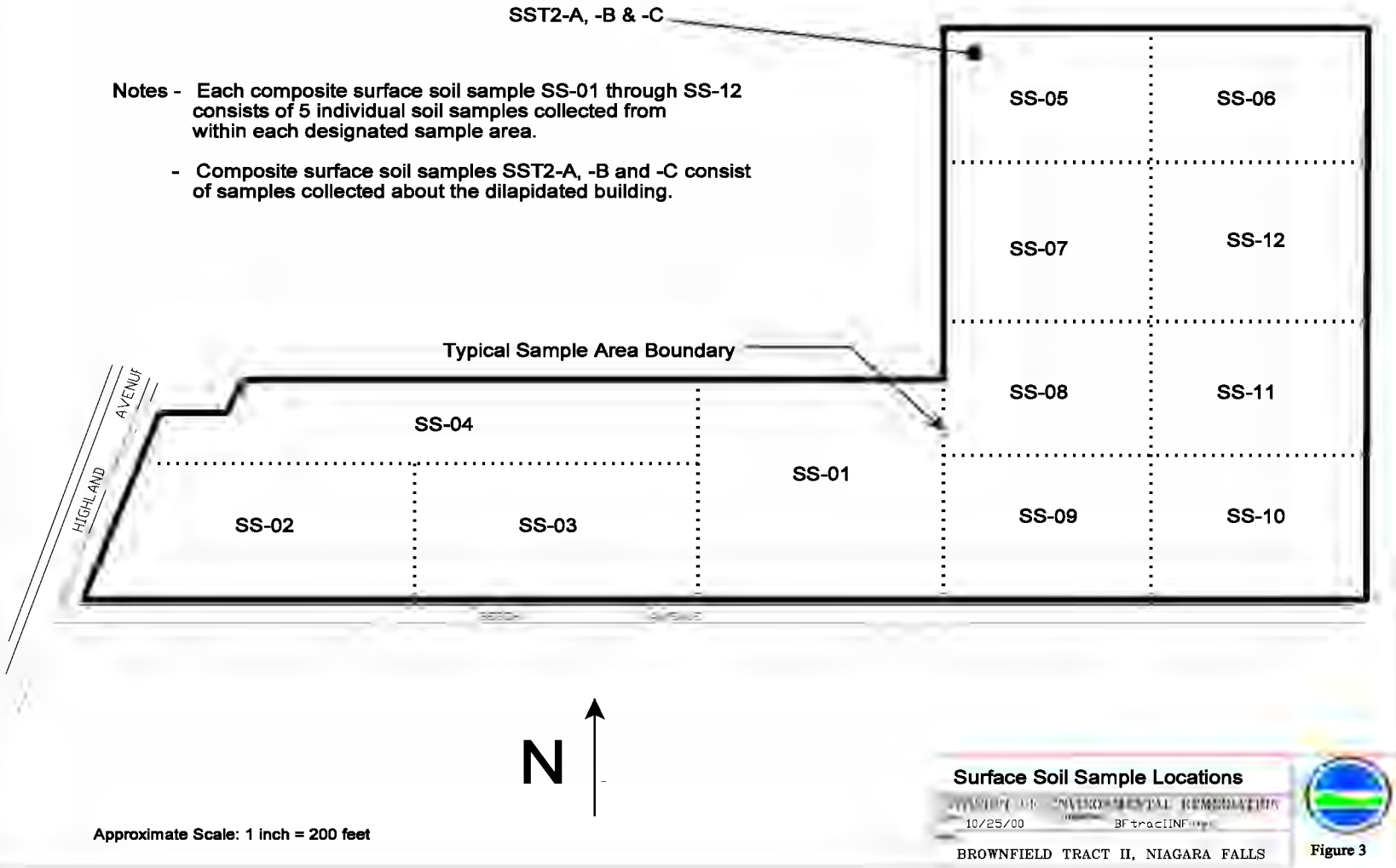
* maximum concentration found in West Area hot spot

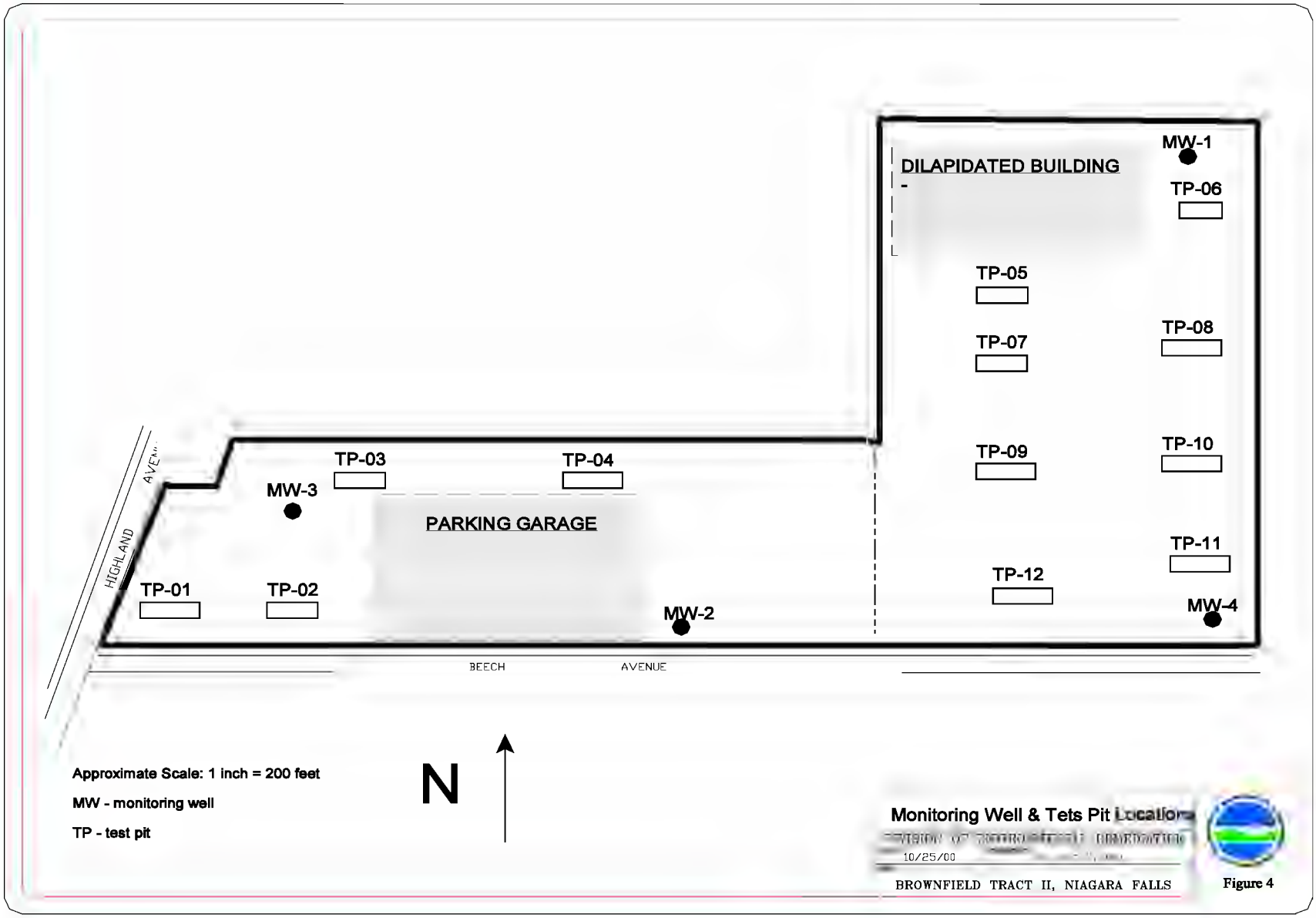
TABLE 3
REMEDIAL ALTERNATIVE COSTS

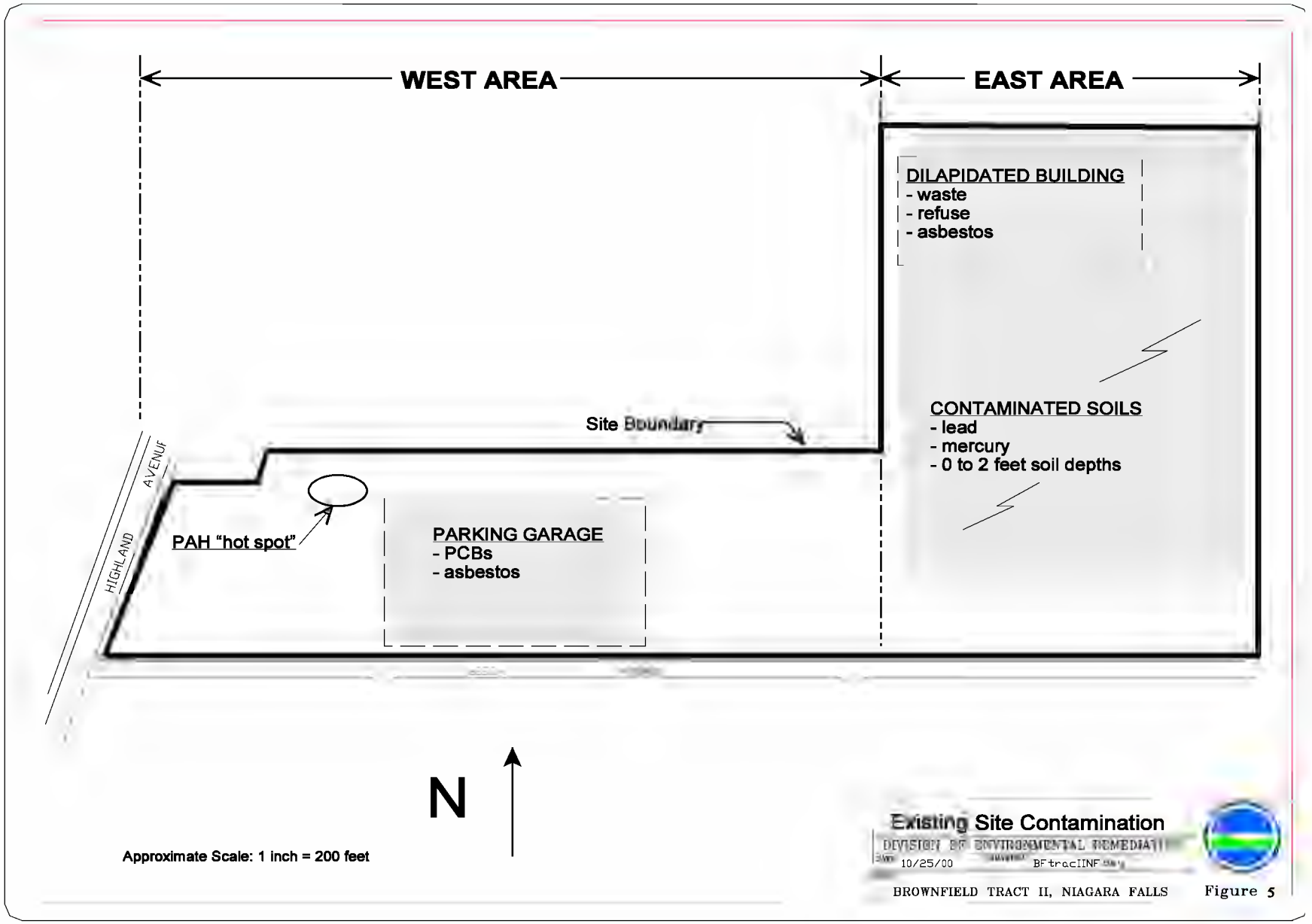
Remedial Alternative		Capital Cost	Annual O&M	Total Present Worth
Number	**Description**			
NA	- No Action	$ 0	$ 0	$ 0
No. 1A	- Full Site Soil Cover - Demolition	$ 1,101,400	$ 20,000	$ 1,408,800
No. 1B	- Partial Site Soil Cover - Hot Spot Removal - Demolition	$ 982,400	$ 15,000	$ 1,212,900
No. 2A	- Full Site Excavation - Demolition	$ 9,566,300	$ 0	$ 9,566,300
No. 2C	- Partial Site Excavation - Partial Site Soil Cover - Hot Spot Removal - Demolition	$ 1,869,500	$ 15,000	$ 2,100,000
No. 2B	- Partial Site Excavation - Hot Spot Removal - Demolition	$ 3,042,000	$ 0	$ 3, 042,000

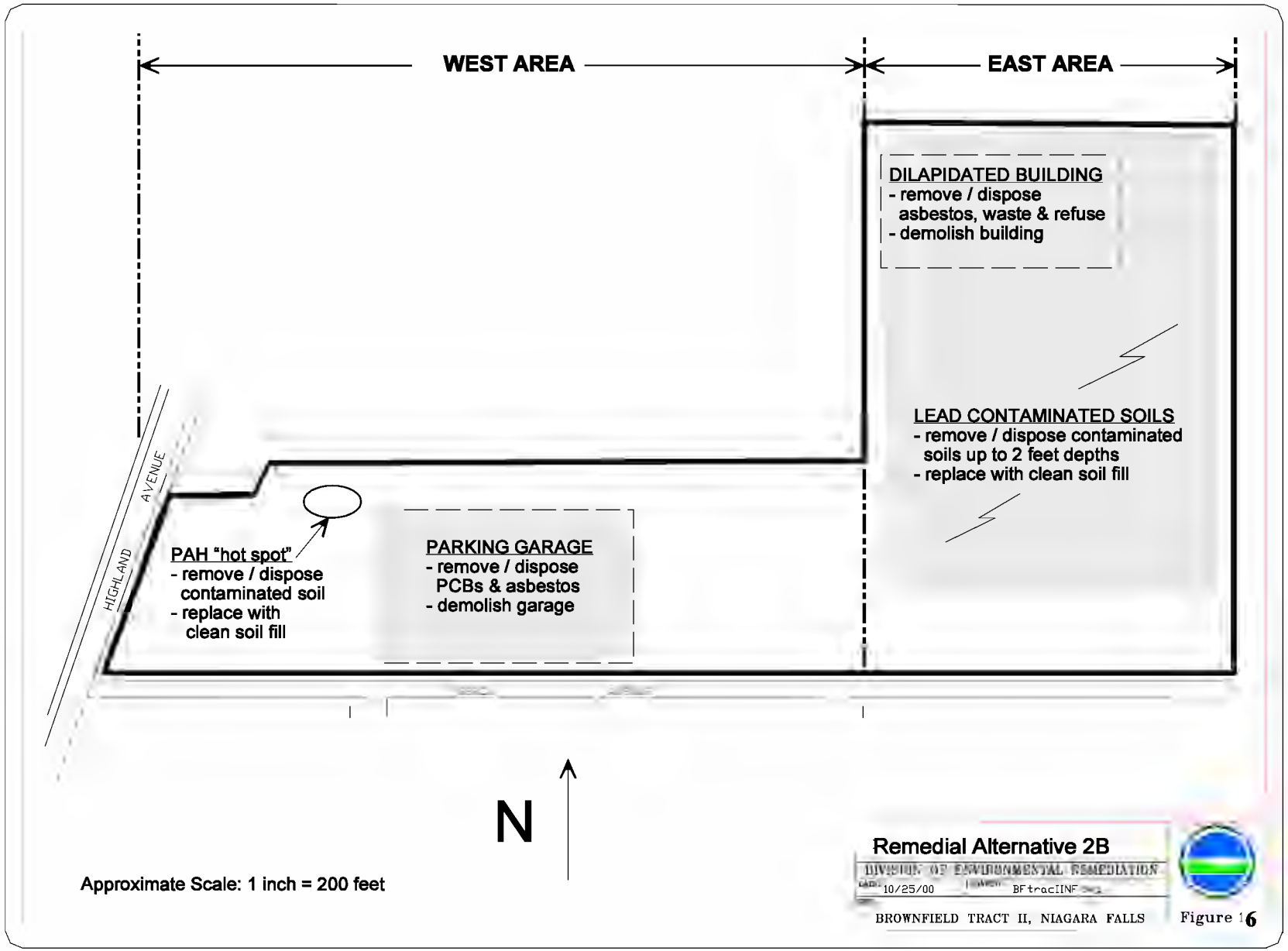

N
Robert Moses Pky
Garrett Av
Roselle Av
College Av
Macklem Av
Devereaux St
Bell St
James Av
Delaware Av
Maryland Av
Maple Av
Massachusetts Av
College Av
Tract II
Brownfield
Site
Beech Ave
9th St
Highland Av
Lewiston Rd
Mc Koon Av
Whitepoor St
104
10th St
Garden Av
Centre Av
Fairfield Av
Grove Av
11th St
13th St
North Av
Ontario Av
Hyde Park Blvd
17th St
Tennessee Av
Louisiana Av
Rhode Island Av
Paul St
Lockport Rd
Lockport St
Seneca Av
Jerauld Av
24th St
32nd St
35th St
Ontario Av
Site Location Map
DIVISION OF ENVIRONMENTAL REMEDIATION
DATE: 10/25/00
DRAWING: BFtracIINF.dwg
SITE:
BROWNFIELD TRACT II, NIAGARA FALLS
Figure 1


N
Tulip Corp.
DILAPIDATED BUILDING
Power City Warehouse
Site Boundary
NIAGARA MOHAWK ROW
HIGHLAND AVENUE
PARKING GARAGE
AVENUE
13th ST.
Approximate Scale: 1 inch = 200 feet
Site Map
DIVISION OF ENVIRONMENTAL REMEDIATION
DATE: 10/25/00
BROWNFIELD TRACT II, NIAGARA FALLS
Figure 2


SST2-A, -B & -C
Notes - Each composite surface soil sample SS-01 through SS-12 consists of 5 individual soil samples collected from within each designated sample area.
- Composite surface soil samples SST2-A, -B and -C consist of samples collected about the dilapidated building.
Typical Sample Area Boundary
SS-05
SS-06
SS-07
SS-12
SS-08
SS-11
SS-04
SS-01
SS-02
SS-03
SS-09
SS-10
HIGHLAND AVENUE
N
Approximate Scale: 1 inch = 200 feet
Surface Soil Sample Locations
10/25/00
BFtracIINF
BROWNFIELD TRACT II, NIAGARA FALLS
Figure 3


DILAPIDATED BUILDING
MW-1
TP-06
TP-05
TP-08
TP-07
TP-09
TP-10
TP-11
TP-12
MW-4
TP-03
TP-04
MW-3
PARKING GARAGE
HIGHLAND
TP-01
TP-02
MW-2
BEECH
AVENUE
Approximate Scale: 1 inch = 200 feet
MW - monitoring well
TP - test pit
N
Monitoring Well & Tets Pit Locations
10/25/00
BROWNFIELD TRACT II, NIAGARA FALLS
Figure 4


WEST AREA
EAST AREA
DILAPIDATED BUILDING
- waste
- refuse
- asbestos
CONTAMINATED SOILS
- lead
- mercury
- 0 to 2 feet soil depths
Site Boundary
HIGHLAND AVENUE
PAH "hot spot"
PARKING GARAGE
- PCBs
- asbestos
N
Approximate Scale: 1 inch = 200 feet
Existing Site Contamination
10/25/00
BFtractINF
BROWNFIELD TRACT II, NIAGARA FALLS
Figure 5


WEST AREA
EAST AREA
DILAPIDATED BUILDING
- remove / dispose asbestos, waste & refuse
- demolish building
LEAD CONTAMINATED SOILS
- remove / dispose contaminated soils up to 2 feet depths
- replace with clean soil fill
PARKING GARAGE
- remove / dispose PCBs & asbestos
- demolish garage
PAH "hot spot"
- remove / dispose contaminated soil
- replace with clean soil fill
HIGHLAND AVENUE
N
Approximate Scale: 1 inch = 200 feet
Remedial Alternative 2B
DIVISION OF ENVIRONMENTAL REMEDIATION
10/25/00
BFtracIINF
BROWNFIELD TRACT II, NIAGARA FALLS
Figure 6

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Tract II Site
Environmental Restoration Proposed Remedial Action Plan
Niagara Falls(C), Niagara County
Site No. B-00022-9

The Proposed Remedial Action Plan (PRAP) for the Tract II Site was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on August 29, 2002. This Plan outlined the preferred remedial measure proposed for the remediation of contaminated soil and sediment at the Tract II Site. The preferred remedy consists of the following measures:

- excavation and offsite disposal of contaminated soil from the eastern portion of the site and from the isolated hot spot of the western portion; imposition of a deed restriction requiring compliance with an approved soils management plan if warranted by residual contamination left after completion of remedial actions,

- removal and off-site disposal of contaminated sediments and water from the sump/drain of the underground parking garage,

- removal and off-site disposal of waste, refuse and debris dumped about the site,

- removal and off-site disposal of asbestos containing materials (ACM) from the parking garage and dilapidated building, and

- demolition of the underground parking garage and the dilapidated building, with recycle/reuse of demolition materials where feasible, and off-site disposal where recycle/reuse is not feasible. Through the public review process discussed in this summary, the selected remedy was modified to include an option to retain the garage for future site development purposes if feasible.

The release of the PRAP was announced via a notice to the mailing list, informing the public of the PRAP's availability.

A public meeting was held on September 10, 2002 which included a presentation of the Site Investigation (SI) and Remedial Alternatives Report (RAR) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. Written comments were received from the City of Niagara Falls and ten residents as outlined later in this summary.

The public comment period for the PRAP ended on October 14, 2002.

This Responsiveness Summary responds to all questions and comments raised at the September 10, 2002 public meeting and to the written comments received.

The following are the comments received at the public meeting, with the NYSDEC's responses:

Comment 1 - SI Field Work:

When was the SI field work done?

Response 1:

The SI was conducted during the period of December 1998 to August 2000. A report entitled "Site Investigation and Remedial Alternatives Report, Tract II Site, Niagara Falls, New York, August 2000" is available. The report describes the field activities and findings of the SI in detail. Also the PRAP provides a summary all field work and its findings.

Comment 2 - Groundwater Depth:

How deep is the ground water?

Response 2:

During the SI, the depth to groundwater beneath the site was found to be approximately 12½ to 16 feet below ground surface.

Comment 3 - Mercury & Lead Presence:

What about the presence of mercury and lead at the site, where are they located?

Response 3:

Mercury and lead are among the main chemicals of concern at the site. They were detected at elevated concentrations primarily in soils in the eastern portion of the site at depths from 0 to 2 feet below ground surface. In the western portion of the site, lead and mercury soil concentrations above guidance criteria were detected in a few small isolated locations (hot spots) generally at depths from 0 to 2 feet below ground surface.

Comment 4 - Residual Contamination:

Will the contaminants remain on site after the proposed remediation?

Response 4:

The implementation of the proposed remedy will remove most of the contaminants from the site which are at concentrations above cleanup guidance values. All contaminated soils and waste deemed to be hazardous waste as per regulatory definition will be removed and properly disposed off site. Only low level residual contamination will remain at the site.

These residuals do not pose a threat to public health and will not hinder site redevelopment for commercial and industrial use.

Comment 5 - SCG & TAGM:

How does an SCG differ from a TAGM?

Response 5:

"SCG" is an abbreviation for Standards, Criteria and Guidance. It is a term used to represent the thresholds established through law, regulation and/or best practices used to protect public health and the environment. Frequently SCGs are presented as numerical concentrations of contaminants in a given environmental media (air, soil, water and sediments). SCGs also guide the remedial selection process used to determine what actions are necessary to effectively clean up a site. "TAGM" is the abbreviation of Technical and Administrative Guidance Memorandum, and is a series of guidance memoranda used by the Department of Environmental Conservation, Division of Environmental Remediation to direct many of the activities undertaken to investigate and remediate contaminated sites. TAGMs are one form of SCGs.

SCGs utilized for the Tract II project include NYSDEC Ambient Water Quality Standards and Guidance Values, Part 5 of the New York State Sanitary Code and TAGM 4046 for contaminated soils.

Comment 6 - Phased Cleanup:

Could the cleanup be done in two years rather than all at once?

Response 6:

Section 8 of the ROD provides for consideration of a phased remedial program to remediate the site. Such phasing will be considered during the design stage of the remedial project.

Comment 7 - Temporary Site Use:

Could recreational use be included as an option in the ROD? In the east area, if it is not going to be suitable for residential use, would it be suitable for recreational use? After the area is remediated, what would be needed to use a portion of the area for recreational use until a developer is found?

Response 7:

In its application for the State assistance under the brownfield program , the City of Niagara Falls has stated that the intended use of the site would be light industrial and/or commercial. The selected remedy for the site is therefore, based on this intended use. Temporary use other than that intended might be possible, but would require evaluation, assessment and acceptance by both the NYS Departments of Environmental Conservation and Health.

Comment 8 - Offsite Testing:

Was any testing done offsite?

Response 8:

The site investigation included the collection of off-site soil samples to determine the background concentrations of contaminants detected at the site. The results of offsite testing are included in the Site Investigation report noted in Response 1 above.

Comment 9 - Asbestos Disposal:

Will the asbestos to be removed from the site buildings be disposed offsite?

Response 9:

All asbestos containing materials(ACM) removed from the site will be disposed off site in accordance with applicable rules and regulations.

Comment 10 - Power City Site:

What is the time line for clean up of the Power City Warehouse? Is it currently undergoing the same brownfield environmental restoration process as for Tract II ?

Response 10:

The City of Niagara Falls is pursuing participation in the Environmental Restoration Program under the 1996 Clean Water/Clean Air Bond Act for investigation of the Power City site. An application has been submitted and is currently being processed by the Department. Approval of the application will allow the City to enter into a State Assistance Contract which will provide cost share funding to undertake the site investigation and prepare a remedial alternatives report (SI/RAR). This is the same program and process utilized for the Tract II site. Like Tract II, cost sharing for the Power City project is expected to be 75% State and 25% City. While a specific project schedule for Power City is not yet available, it is expected that the SI/RAR for this project will take from 1 to 2 years to complete. Ultimately, a Proposed Remedial Action Plan (PRAP) will be developed by the Department and presented to the public for review and comments. The process would be the same as being done for the Tract II Site.

A letter dated September19, 2002 was received from Mr. Thomas J. DeSantis, Senior Planner for the City of Niagara Falls which included the following comments:

Comment Parking Garage & Phased Remediation:

1. Under the DEC's Proposed Remedial Action Plan, the underground parking garage is scheduled to be demolished after removal of asbestos and other wastes from the garage. The proposed remedy should have an option which will allow the underground parking garage to remain on site for its economically feasible re-use during the re-development of the site. Remediation costs could be significantly lower if demolition costs could be avoided.

2. The proposed remedy should be implemented under a phased remedial program. As a part of the phased program, the asbestos and PCBs would still be removed from the garage, but structural integrity analysis could be performed on the structure during the initial phase to determine the feasibility of re-using the structure, perhaps as a foundation of a building under the re-development plan of the site.

Response:

1. The proposed remedy under the alternative 2B has been modified to include the following:

   During the design phase of the remedy, detailed structural analysis will be performed to determine the condition of the underground parking garage. Based on the result of this analysis, it will be determined whether to demolish the structure or leave it (after asbestos and PCB removal) for re-use in the future development of the site.

2. The selected remedy provides for consideration of project phasing during the early stages of the remedial design. Such phasing can include parking garage considerations.

Letters dated September 25, 2002 were received from several residents of Niagara Falls. All letters contained the same text but were signed individually by the following persons.

Ms. Clara Dunn, Niagara Falls Empire Zone Coordinator, 1022 Main Street, Niagara Falls, NY 14305,
Mr. Willis McCreary, 1846 South Avenue, Niagara Falls,
Mr. Philip L. Vincent, 418 Elmwood Avenue, Niagara Falls, NY 14305,
Mr. Warren A. Vincent, 617-23rd Street, Niagara Falls, NY 14301,
Mr. Anthony M. Timmins Jr., 1304 Cleveland Avenue, Niagara Falls, NY 14305-2703,
Ms. Brenda L. Hamilton, 1879 Michigan Avenue, Niagara Falls, NY 14305,
Mr. James A. Hamilton, 1879 Michigan Avenue, Niagara Falls, NY 14305,
Ms. Shirley Hamilton 1155 Ontario Avenue, Niagara Falls, NY 14305,
Mr. James A. Leverett, 1317 Niagara Street, Niagara Falls, NY 14303, and
Ms. Janice Lowery Curry, 7900 Packard Road, Niagara Falls, NY 14304.

Comment - Alternative 2A vs. Alternative 2B:

Remedial Alternative 2A calls for the excavation and offsite disposal of the upper two feet of soil throughout the site (49,400 cubic yards), replacement by clean soil to original grade and demolition of site structures. This alternative would remove all contaminated soils that exceed clean up criteria and provide long term effectiveness and permanence. It would allow for future site development without the need to redesign or reconstruct a site cover. We request implementation of Alternative 2A as it is in the best interest of our community and the city as a whole.

Response:

Both Alternatives 2A and 2B require soil excavations and offsite disposal. Alternative 2A calls for excavation of the upper two feet of soils from the entire site and Alternative 2B requires excavation of up to two feet depths in the eastern portion of the site and removal of hot spots in the western portion. Similar to the Alternative 2A, Alternative 2B will remove most of the contaminants from the site. Only low level residual contaminants would be left in the western portion which would not hinder the redevelopment of the site for industrial and commercial use. As both alternatives would provide adequate protections for the use intended and effectively satisfy the other evaluation criteria outlined in Section 7.2 of the PRAP, cost was considered as the last balancing criteria in the evaluation process. The estimated cost to implement Alternative 2B is $3.04 million as compared to $9.56 million for Alternative 2A. The substantially higher cost of Alternative 2A over Alternative 2B would not result in significantly higher levels of protection nor substantially improve development opportunities. Alternative 2B is the more cost effective alternative and has therefore, been selected for implementation.

APPENDIX B

Administrative Record

Administrative Record

Tract II Environmental Restoration Site
City of Niagara Falls, Niagara County, New York
Site No. B-00022-9

1. City of Niagara Falls, Tract II Site Redevelopment, May 18 1997, Revised July 22, 1998, Application for State funds under 1996 Clean Water/ Clean Air Bond Act, Environmental Restoration Projects - Title 5

2. Ecology and Environment Engineering, P. C., Final Work Plan for Site Investigation and Remedial Action Report(SI/RAR), Tract II Site, November 1998, Prepared for Department of Environmental Services, City of Niagara Falls

3. New York State Department of Environmental Conservation 1996 Clean Water/Clean Air Bond Act, Environmental Restoration Projects - Title 5, Site Assistance Contract(SAC) No. C300726, Tract II Site, Project #No. B00022-9, February 1999

4. Ecology and Environment, P.C. Site investigation and Remedial Alternatives Report, Tract II Site, August 2000, Prepared for City of Niagara Falls, Office of Environmental Services

5. New York State Department of Environmental Conservation, Environmental Restoration, Proposed Remedial Action Plan, Tract II Site, City of Niagara Falls, Niagara County, August 2002